

This is an official **CDC HEALTH UPDATE**

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Interim Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with Severe Acute Respiratory Syndrome (SARS): March 22, 2003

Background: The Centers for Disease Control and Prevention (CDC) and the World Health Organization have received reports of patients with Severe Acute Respiratory Syndrome (SARS) from various international and domestic sources. The cause of these illnesses is unknown and is being investigated. Up-to-date information and CDC guidance documents with respect to SARS can be found at <http://www.cdc.gov/ncidod/sars>. Listed below are interim biosafety guidelines for handling SARS specimens:

1. The following activities may be performed in Biosafety Level (BSL) 2 facilities using BSL-2 practices as described in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories manual (full text available at <http://www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4toc.htm>):
 - a. Pathologic examination and processing of formalin-fixed or otherwise inactivated tissues.
 - b. Molecular analysis of extracted nucleic acid preparations.
 - c. Electron microscopic studies with glutaraldehyde-fixed grids.
 - d. Final packaging of specimens for transport to diagnostic laboratories for additional testing.
Specimens should already be in a sealed, decontaminated primary container.
2. The following activities may be performed in BSL-2 facilities using BSL-3 practices:
 - a. Aliquoting and/or diluting specimens.
 - b. Performing diagnostic tests that don't involve amplifying the agent in vitro or in vivo. These may include IFA, DFA, other direct microscopic tests on fixed slides, and rapid molecular methods on untreated specimens.
 - c. Nucleic acid extraction procedures involving untreated specimens.
 - d. Serologic testing.

Particular attention should be given to the following:

Manipulations should be carried out in a certified biological safety cabinet.

Laboratory workers should wear protective equipment, including disposable gloves, solid front gowns with cuffed sleeves, eye protection and respiratory protection. Acceptable methods of respiratory protection include N-95 or N-100 respirators; or powered air-purifying respirators (PAPRs) equipped with N-95 or high efficiency particulate air (HEPA) filters. Personnel who cannot wear N-95 respirators because of facial hair or other fit-limitations should wear PAPRs.

Centrifugation should be carried out using sealed centrifuge cups or rotors that are loaded and unloaded in a biological safety cabinet.

3. The following activities require BSL-3 facilities and work practices:

- a. Culture-based attempts to isolate the agent, including inoculation onto cell culture, bacteriological or mycological media, and eggs.
- b. Initial characterization of agents recovered in cultures of SARS specimens.

4. The following activities require Animal BSL-3 facilities and work practices:

- a. Inoculation of animals for potential recovery of the agent from SARS samples.
- b. Protocols involving animal inoculation for characterization of putative SARS agents.

Packaging, shipping and transport of specimens from suspect and probable SARS cases must follow the current edition of the International Air Transport Association (IATA) Dangerous Goods Regulations - <http://www.iata.org/dangerousgoods/index> and US DOT 49 CFR Parts 171-180 - <http://hazmat.dot.gov/rules.htm>. Step-by-step instructions on appropriate packaging and labelling can be viewed at the following CDC website:

<http://www.cdc.gov/ncidod/sars/pdf/packingspecimens-sars.pdf>.

The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national and international organizations.

DEPARTMENT OF HEALTH AND HUMAN SERVICES